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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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Salt Lake City, Utah 84180-1203

801-538-5340

March 10, 1993

TO: Board of Oil, Gas and Mining

THRU: Lowell P. Braxton, Acting Director *LOB*

FROM: D. Wayne Hedberg, Permit Supervisor *DWH*

RE: Board Approval, Amount and Form of Replacement Surety, Tenneco Minerals Company - Utah, Goldstrike Mine, M/053/005, Washington County, Utah

The Division seeks approval from the Board of Oil, Gas and Mining (Board) of the amount and form of replacement surety presented by Tenneco Minerals Company - Utah (TMC-Utah) for their Goldstrike Mine in Washington County, Utah. On March 25, 1992, the Board approved of a revised reclamation contract and surety bond (\$2,000,000) submitted by TMC-Utah in response to the Division's approval of a permit *amendment* to the Goldstrike permit (Covington Pit and haul road development).

On September 14, 1992, the Division granted its approval of a permit *revision* to the Goldstrike Mine permit. Another reclamation estimate was calculated by the Division (copy attached). TMC-Utah's revised reclamation estimate was considered very conservative by the Division, therefore the existing \$2,000,000 surety has not been changed.

Because the permit revision created a change in the total disturbed acreage and the legal description, corresponding corrections have been made to the Reclamation Contract and Surety Bond forms. These changes are considered substantive are being presented to the Board for approval.

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Memo to Board
Tenneco Minerals Co. - Utah
M/053/005
March 10, 1993

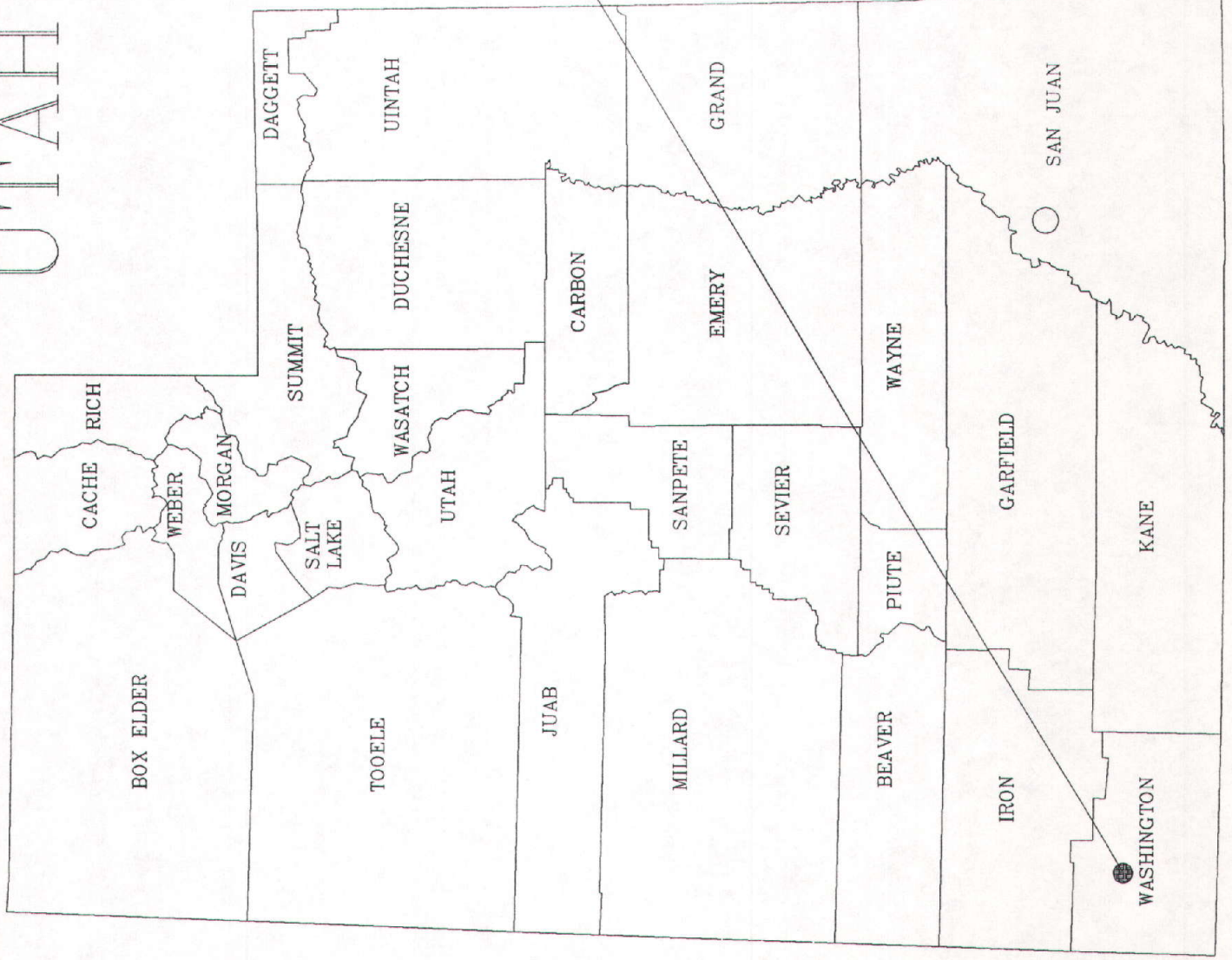
Attached for your review are copies of the following documents:

1. location map
2. summary checklist
3. revised executive summary
4. revised reclamation surety estimate
5. revised Reclamation Contract FORM MR-RC
6. revised Surety Bond MR FORM-6

Thank you for your time and consideration of this approval request.

jb
Attachments
M053005.brd

UTAH



M/053/005
Goldstrike Mine
TMC-Utah

DOGM MINERALS PROGRAM
 Checklist for Board Approval
 of
FORM AND AMOUNT OF SURETY

Prepared March 10, 1993

Mine Name Goldstrike

File No. M/053/005

Items	Provided		Remarks
	Yes	No	
Executive Summary	X		Revised summary to include permit revision.
Location Map	X		
Reclamation Bond Estimate	X		
Signed Reclamation Contract	X		
Signed Power of Attorney/ Affidavit of Qualification	X		
Bond/Reclamation Surety	X		
Surety Sign Off (Other State/Federal Agencies)		X	BLM has accepted bond amount and approved the permit revision (\$'s exceed BLM requirements).

EXECUTIVE SUMMARY

Revised March 10, 1993

(NOI revisions - 10/5/90, 1/22/92; NOI amendments - 3/5/92)

Mine Name: Goldstrike

I.D. No: M/053/005

Operator: Tenneco Minerals Company-Utah
P. O. Box 2650
St. George, Utah 84770

County: Washington
New/Existing: Existing Mine -
Original permit approved 8/88.

Mineral Ownership: Federal/Private

Surface Ownership: Federal/Private

Telephone: (801) 574-3164

Lease No.(s): Refer to Appendix A

Contact Person: James Smith

Permit Term: Life of mine

Life of Mine: Present reserves to be depleted by mid-1995

Legal Description: Township 39 South, Range 18 West, portions of Sections 16, 17, 19, 20, 21 and 30; Township 39 South, Range 19 West, portions of Section 25 (SEE DETAILED DESCRIPTION ATTACHED TO RECLAMATION CONTRACT AND SURETY BOND) .

Mineral(s) to be Mined: Gold, silver

Mining Methods: Open Pit Mining - Cyanide heap leach operation

Acres to be Disturbed: total 382 (1/22/92 revision - approved 9/14/92 = 112 new acres)

Present Land Use: Wildlife habitat, recreational, mining and exploration

Postmining Land Use: Same as above

Variances from Reclamation Standards (Rule R613) Granted: R647-004-111.6, R647-004.111.7, R647-004-111.9

Soils and Geology:

Soil Description: Undeveloped colluvium on steep slopes, relatively shallow, poorly developed soils, consisting of - gravelly silty loams, silty clays, gravelly clay loams, gravelly silt loams, sandy loams and gravelly sandy loams.

pH: 7.96 - 8.11

Special Handling Problems: Rocky outcrops and steep slopes lack salvageable topsoil

Geology Description: Bull Valley Mining District, complex geology, consisting of highly deformed and faulted Tertiary, Pennsylvanian and Mississippian sedimentary deposits and

Tertiary volcanic rocks. Present structure at Goldstrike property consists of arcuate high-angle faults forming a structural graben in middle of property. Approximately 50% of site area consists of volcanic tuff outcrop.

Hydrology:

Ground Water Description: The potentiometric surface in the Goldstrike mine area was calculated from water level measurements from 76 open drill holes. Only 22 of the holes contained water. Water levels varied from 20.5 feet to 208.5 feet. Flow velocities range from 0.75 to 751 feet per year. Local groundwater potentiometric surface is inclined from east to west toward the East Fork Beaver Dam Wash valley located @ one mile downgradient. Average water table flow gradient is 0.154 feet/ft. Class II groundwater quality classification.

Surface Water Description: The Goldstrike area is located principally within the Arsenic Gulch watershed, an intermittent stream that is a major tributary to East Fork Beaver Dam Wash. A small portion of the mine disturbance is located north of Arsenic Gulch in the headwaters of small, unnamed tributary to East Fork Beaver Dam Wash. Processing facilities are located predominately in an unnamed tributary to Arsenic Gulch. A small disturbance in the southeast portion of the mine area is located in Quail Canyon, also tributary to Arsenic Gulch. Quail Canyon Creek is intermittent, approximately 2 miles above the mine site and ephemeral at mine site. Most tributaries of Arsenic Gulch are ephemeral.

New mine development under the 1/22/92 revision (Goldsil Area) will also occur within Arsenic Gulch and four other (Jackson Gulch & 3 smaller unnamed ephemeral drainages) tributaries to East Fork Beaver Dam Wash. The approved sediment control plan will minimize potential mining related impacts to these drainages.

Water Monitoring Plan: Onsite observation wells are being monitored pursuant to the requirements of the State Department of Environmental Quality (Division Water Quality).

Ecology:

Vegetation Type(s); Dominant Species: Pinyon - Juniper Community, Pinyon pine, Utah juniper, Utah service berry, shrub live oak.

Percent Surrounding Vegetative Cover: 18%

Wildlife Concerns: Fencing to be used to keep animals away from process solution ponds. Half round corrugated plastic culverts are used to cover open leach process solution ditches.

Process water ponds containing cyanide solutions are netted.

Existing Surface Facilities: 8 open pits, 3 mine dumps, crushing plant, heap leach facilities, Carbon Absorption plant, small gold smelter, solution ponds and mine offices.

Proposed Facilities: 3 new open pits (Moosehead, Picaroon and Caribou), extension of the new haul road construction to access the new pits, one additional Leach Pad #3, and @22 new topsoil stockpiles. (@112 acres new disturbance).

Mining and Reclamation Plan Summary:

During Operations:

With the addition of the Moosehead, Picaroon and Caribou pits, TMC-Utah will be approved to mine a total of 11 open pits for gold ore. The ore will be crushed and removed to the leach pads for cyanide processing. The gold-bearing solutions are processed in a Carbon Absorption recovery plant, and a small gold smelter. Mining commenced in 1988 and is expected to conclude in mid-1995, unless further exploration identifies additional mineable reserves.

Following Operations:

1. The leach pads and ponds will have residual cyanide values neutralized, then these structures will be decommissioned, graded, topsoiled, and revegetated.
2. All buildings and process equipment will be removed. Concrete foundations will be demolished and buried.
3. All pits will either be totally backfilled, or backfilled to the extent such that surface runoff would drain away from them.
4. Safety berms or fences will be constructed adjacent to any highwalls remaining after mining.
5. The Quail Canyon fill dam will be left for livestock and wildlife watering.
6. The BLM will maintain a road through the mine site connecting Road No. 42529 with the County Road along East Fork of Beaver Dam Wash.
7. Of the 382 acres to be disturbed, approximately 48 acres, associated with the pit highwalls, will be left unreclaimed. The remaining disturbed areas will be regraded, topsoiled and revegetated.

8. Post mine landuse will consist of livestock grazing and wildlife habitat.

Surety:

Amount: \$2,000,000 (1997 Dollars)

Form: Surety Bond

Renewable Term: 5 - year

RECLAMATION ESTIMATE

DRAFT

Tenneco Minerals Company (TMC)

Goldstrike Mine Washington County

M/053/005

last revision

July 13, 1992

Prepared by Utah State Division of Oil, Gas & Mining

Reclamation Details

- TMC estimates, DOGM unit costs, Means Site Work & Blue Book used
- Generator for decommission of heap leach (10 months)
- Decommission labor, reagents, supplies, vehicles, etc. (TMC estimate)
- Regrade leach pads, plant, ponds, Padre dump & road, 6000' Goldsil road
- Rip ponds to 24"; all roads, plant, crusher, & contractor sites to 12"
- Remove 4 + 4 culverts; haul, dump, & spread fill (TMC estimate)
- Partial backfilling of Padre & Moosehead pits (to be non-impounding)
- Remove 6 low-flow crossings (re-establish channels)
- Hauling & placing topsoil by scrapers, dozers, & water truck
- Seeding, mulching, crimping, fertilizing or hydroseeding (TMC estimate)
- Miscellaneous: plant & lab demolition, equip. mob/demob, DI pipeline
- Total disturbed area = 382 acres, reclaimed area = 323 acres

Description	Amount	\$/Unit	Cost-\$
Generator (Decommission)	10 mo	750	7,500
Labor (Decommission)	TMC estimate		348,200
Miscellaneous (Decommission)	10 mo	6,000	60,000
Regrading	1,770 hr	185	327,450
Ripping	107 hr	191	20,437
Culvert Removal (Goldstrike= 4)	4	200	800
Culvert Removal (Goldsil= 4)	TMC estimate		71,700
Pit Backfill (Padre & Moosehead)	600,000 ton	0.333	199,800
Removal of low-flow crossings	6 each	6,700	40,200
Topsoiling (TMC estimate)	547 hr	686	375,242
Revegetation	TMC estimate		184,200
Highwall Fence (TMC est)	2,150 ft	3.67	7,891
Miscellaneous	TMC estimate		39,000
Supervision	TMC estimate		44,500
	SUBTOTAL		1,726,920
	+ 10% CONTINGENCY		172,692
	SUBTOTAL		1,899,611
	+ 5 yr ESCALATION(1.27%)		123,728
	TOTAL		2,023,340
	ROUNDED TOTAL IN 1997-\$		\$2,023,000
Average cost per acre =	\$6,263 per acre		

Tenneco Inc

Tenneco Building
P.O. Box 2511
Houston, Texas 77252-2511
(713) 757-2131



February 19, 1993

Mr. D. Wayne Hedburg
Utah Department of Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Tenneco Minerals Co. - Utah
Goldstrike Mine, Permit #M/053/005
Washington Co., Utah

Dear Mr. Hedburg:

Enclosed for your review and handling, please find a newly issued Surety Bond together with a revised Reclamation Contract to complete the Permit Transfer for the referenced mine. Upon Board approval, please forward these original documents to me at the letterhead address.

If you require additional information, please contact me at (713) 757-6000.

Sincerely,

A handwritten signature in dark ink, appearing to read "Mark T. Bardwell".

Mark T. Bardwell

:ldc

cc: J. M. Badger

WP\MTB21993.doc

RECEIVED

FEB 22 1993

DIVISION OF
OIL GAS & MINING